

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently amended) A fluid control and processing system comprising:
a housing having a plurality of chambers; and

a valve body received in the housing, the valve body comprising a single fluid processing region continuously coupled fluidically to a single fluid displacement region, wherein the fluid processing region is contained within a disk portion of the valve body, and the fluid displacement region is contained substantially within a tubular portion of the valve body,

the fluid displacement region being depressurizable to draw fluid into the fluid displacement region and pressurizable to expel fluid from the fluid displacement region, the valve body including a plurality of external ports,

the fluid processing region being fluidically coupled with at least two of the external ports, the fluid displacement region being fluidically coupled with at least one of the external ports, and

the valve body being adjustable relative to a plurality of chamber ports to allow the external ports to be placed selectively in fluidic communication with the plurality of chambers, wherein at least one of the plurality of chambers is a processing chamber different from said fluid processing region, the processing chamber including a first chamber port and a second chamber port for selectively communicating with at least one of the external ports of the valve body, wherein the processing chamber contains a fluid processing material which is an enrichment material that captures a target from the fluid sample, or a trapping material that traps unwanted material from the fluid sample.

- 2-3. (Canceled)

4. (Previously presented) The system of claim 1, wherein the fluid processing material comprises at least one solid phase material selected from the group consisting of beads, fibers, membranes, filter paper, glass wool, polymers, and gels.

5. (Previously presented) The system of claim 4, wherein the fluid processing material comprises a filter and beads.

6. (Previously presented) The system of claim 4, wherein the fluid processing material comprises at least two types of beads.

7. (Previously presented) The system of claim 4, wherein the at least two types of beads perform at least two different functions which are selected from the group consisting of cell capture, cell lysis, binding of analyte, and binding of unwanted material.

8. (Previously presented) The system of claim 1 wherein the processing chamber contains a solid phase material which performs at least two different functions selected from the group consisting of cell capture, cell lysis, binding of analyte, and binding of unwanted material.

9. (Previously presented) The system of claim 1, wherein the fluid processing material comprises at least one liquid phase material selected from the group consisting of ficoll, dextran, polyethylene glycol, and sucrose.

10. (Canceled)

11. (Previously presented) The system of claim 1, wherein the fluid processing material is contained in the fluid processing region by one or more frits.

12. (Previously presented) The system of claim 1 wherein the external ports are disposed on a generally planar external port surface of the valve body, and wherein the valve body is rotatable around an axis and relative to the plurality of chamber ports to allow the external ports to be placed selectively in fluidic communication with the plurality of chambers,

the axis being perpendicular to the external port surface, and the external ports being spaced from the axis by a common radius.

13. (Previously presented) The system of claim 4, wherein the processing chamber contains one type of bead that performs at least two different functions selected from the group consisting of cell capture, cell lysis, binding of analyte, and binding of unwanted material.

14. (Previously presented) The system of claim 1 wherein the processing chamber includes a processing module containing the fluid processing material.

15. (Previously presented) The system of claim 14 wherein the processing chamber further includes a collection area and a spout for directing the fluid into the collection area.

16. (Previously presented) The system of claim 1 wherein at least one of the plurality of chambers is a reagent chamber containing dried or lyophilized reagents.

17-26. (Canceled)

27. (Previously presented) The system of claim 1, wherein the valve body is adjustable with respect to the housing to close the external port so that the fluid displacement region and the fluid processing region are fluidically isolated from the chambers.

28-33. (Canceled)

34. (Previously presented) The system of claim 1, wherein the fluid displacement region is depressurizable by increasing in volume and is pressurizable by decreasing in volume.

35. (Original) The system of claim 34 further comprising a fluid displacement member disposed in the fluid displacement region, the fluid displacement member being movable to adjust the volume of the fluid displacement region.

36. (Original) The system of claim 35 wherein the fluid displacement member comprises a piston movable in a linear direction in the fluid displacement region.

37. (Original) The system of claim 36 wherein the fluid displacement member comprises a piston shaft which is connected to a distal portion of a piston rod for driving the piston shaft to move inside the fluid displacement region, the piston shaft being smaller in cross-section than the piston rod.

38. (Previously presented) The system of claim 1, further comprising an energy transmitting member operatively coupled with the fluid processing region for transmitting energy thereto to process fluid contained therein.

39. (Original) The system of claim 38 further comprising a cover disposed between the fluid processing region and the energy transmitting member.

40. (Original) The system of claim 39 wherein the cover comprises a rigid shell.

41. (Original) The system of claim 39 wherein the energy transmitting member comprises an ultrasonic member for transmitting ultrasonic energy through the cover into the fluid processing region.

42. (Previously presented) The system of claim 1, wherein the valve body includes a crossover channel, the valve body being adjustable with respect to the housing to place the crossover channel in fluidic communication with an aspiration chamber and a source chamber to permit aspiration of a fluid from the source chamber through the crossover channel to the aspiration chamber.

43. (Previously presented) The system of claim 42 wherein the valve body is rotatably adjustable around an axis, and wherein the at least one external port is disposed within a range of external port radii from the axis and the crossover channel is disposed within a range

of crossover channel radii from the axis, the range of external port radii and the range of crossover channel radii being non-overlapping.

44. (Original) The system of claim 43 wherein the crossover channel is a circular arc lying on a common crossover channel radius from the axis.

45. (Previously presented) The system of claim 1, wherein at least two of the plurality of chambers are separated by a flexible wall to permit change-over of chamber volumes between the chambers.

46-48. (Canceled)